

1 UNITED STATES DISTRICT COURT
2 CENTRAL DISTRICT OF CALIFORNIA

3 ENTROPIC COMMUNICATIONS,
4 LLC,

5 Plaintiff,

6 v.

7 COX COMMUNICATIONS, INC., *et*
8 *al.*,

9 Defendants.

Case No. 2:23-cv-01049-JWH-KES
(Lead Case)

Case No. 2:23-cv-01050-JWH-KES
(Related Case)

[Assigned to the Honorable John W.
Holcomb]

**DECLARATION OF JOHN
HOLOBINKO IN SUPPORT OF
PLAINTIFF ENTROPIC'S
PROPOSED CLAIM
CONSTRUCTIONS**

11
12 ENTROPIC COMMUNICATIONS,
13 LLC,

14 Plaintiff,

15 v.

16 COMCAST CORPORATION, *et al.*,

17 Defendants.
18
19
20
21
22
23
24
25
26
27
28

**DECLARATION OF JOHN HOLOBINKO IN SUPPORT OF PLAINTIFF
ENTROPIC'S PROPOSED CLAIM CONSTRUCTIONS**

TABLE OF CONTENTS

I.	Introduction	1
II.	Qualifications	2
III.	Compensation.....	4
IV.	Materials Considered	4
V.	Legal Standards	6
VI.	Level of Skill in the Art	8
VII.	'682 Patent.....	9
A.	Overview of the '682 Patent	9
B.	Disputed Terms of the '682 Patent	10
i.	“cable modem termination system (CMTS)”	11
ii.	“SNR-related metric”	14

1 I, John Holobinko, declare as follows:

2 **I. Introduction**

3 1. I am over the age of 18 and am competent to make this Declaration
4 (“Declaration”). I have personal knowledge, or have developed knowledge, of the
5 relevant technologies and the matters set forth herein based upon my education,
6 training, or experience. If called upon to do so, I would testify competently thereto.

7 2. I have been retained by counsel for Entropic Communications, LLC
8 (“Entropic”) in the above-captioned action as an independent consultant to offer
9 opinions regarding how a person of ordinary skill in the art would understand certain
10 claim terms in U.S. Patent No. 10,135,682 (the “’682 Patent”), a copy of which is
11 attached as **Exhibit B**. For the purposes of this Declaration, I have not been asked to
12 opine on the meaning of any other terms not addressed herein.

13 3. In forming my opinions, I understand that the claims should be
14 interpreted as they would be understood by a person of ordinary skill in the art
15 (“POSITA”) at the time of the invention. I understand that the claims are to be
16 construed with reference to the patent’s specification, the claims, and the prosecution
17 history, in light of the plain meaning of the terms used in the claims, and with
18 reference to other sources of information, such as dictionaries, textbooks, and
19 literature or other patents in the same or related fields.

20 4. My opinions are based on my years of education, research, and
21 experience, as well as my investigation and study of relevant materials, including
22 those identified in this Declaration.

23 5. My analysis of the materials produced in this investigation is ongoing,
24 and I will continue to review any new material as it is provided. This Declaration
25 represents only those opinions I have formed to date. I may also consider additional
26 documents and information to rebut arguments raised by the Defendants. I reserve
27 any right that I may have to supplement this Declaration if further information
28

1 becomes available or if I am asked to consider additional information. I also reserve
2 any right that I may have to consider and comment on any expert statements or
3 testimony of Defendants' expert(s) in this matter.

4 6. If requested, I am prepared to explain at a technology tutorial or claim
5 construction hearing the technology disclosed in the '682 Patent, including the state
6 of the art around the filing date of the patent. This may include background
7 information on, *e.g.*, broadband communication systems, Hybrid Fiber Coax (HFC)
8 cable systems, and the systems and equipment used to deliver cable TV/internet to
9 the home. Any explanations that I may provide with respect to a technology tutorial
10 or claim construction hearing may also include the use of visual aids or other
11 demonstrations. I am also prepared to rebut, as necessary, matters raised by the
12 Defendants or their expert(s), whether in declarations, reports, depositions, or
13 hearings, and to address related matters raised in the course of claim construction.

14 **II. Qualifications**

15 7. A copy of my curriculum vitae ("CV") is submitted with this report as
16 **Exhibit A.**

17 8. As set forth in my CV, I have over 30 years' experience in the cable
18 television (CATV) industry. During that time, I have held senior roles at some of the
19 largest vendors of DOCSIS equipment and software within the CATV industry, and
20 I have authored multiple patents and academic papers relating to cable TV networks
21 and optical networks. More specifically, I have extensive experience with cable
22 modem termination systems (CMTS) because I oversaw product engineering and
23 development of such systems.

24 9. I received a Bachelor of Science in Electrical Engineering from
25 Carnegie Mellon University in 1973.

26 10. From 1986 through 1998, I was employed by ADC
27 Telecommunications, Inc., a provider of optical video, data, and voice
28

1 communications equipment and software. I served as director of mergers and
2 acquisitions and as VP of product management and marketing. I also helped conceive
3 the company's flagship digital optics solution, which enabled cable headend network
4 interconnect rings, and some of the cable industry's first HFC optical equipment.

5 11. From 1998 through 2003, I was president and chief executive of Aplion
6 Networks, Inc., a venture capital backed start up that developed the first patented
7 solution for reliable cloud-based enterprise software as a service with prioritized
8 delivery over service provider and enterprise networks. While there, I helped create
9 the industry's first layer 4-7 programmable router/switch "Network Virtuoso" and
10 dynamic provisioning software.

11 12. From 2003 through 2005, I was president and chief executive of VPI
12 Systems, Inc., a data analytics software company whose customers were large
13 telecoms and major communications network equipment providers. During my
14 tenure at the company, I increased revenues 80%, won major new customer contracts,
15 and delivered a new analytics software product.

16 13. From 2006 through 2010, I was employed by BigBand Networks (now
17 Commscope), the only CMTS vendor to support DOCSIS 2.0 TDMA and SCDMA.
18 I worked as VP and general manager of the cable edge business, VP of product
19 management, and VP of marketing and member of the executive staff. During my
20 tenure at the company, I led the "edgeQAM" product portfolio within the company's
21 Cable Edge Business. I also led the company's DOCSIS CMTS business. As part of
22 my work, I oversaw product engineering and development of CMTS hardware and
23 software.

24 14. From 2010 through 2013, I was employed by Motorola Mobility Home
25 (now Commscope). I served as VP of strategy and business development for the
26 company's Network Infrastructure Solutions group. As part of my work with the
27 company, I oversaw business strategy and product roadmaps for CMTS hardware
28

1 and software, HFC (hybrid fiber coaxial) equipment, QAM modulation equipment,
2 video processing equipment, and “Fiber to the Home” equipment. I led the
3 development of one of the cable industry’s first PNM systems and wrote at least one
4 technical paper that was in the 2013 SCTE Expo Conference Proceedings, Title:
5 “New Analytic Methods For Determining Network Performance Issues And
6 Predicting Service Disruptions in Cable Networks.”

7 15. From 2014 through 2019, I was director of business strategy for Cisco
8 Systems, Inc. There, I headed network business strategy for the company’s access
9 networks business. As part of my work, I was involved in product design and
10 specifications for CMTS hardware and software, HFC equipment and passives, RF
11 (radiofrequency) equipment, OSS systems, and optical networking equipment.

12 16. I am currently managing director and owner of Business Reimagined,
13 LLC, an independent consulting firm that provides market, technology, competitive
14 analysis, and business strategy assessments across hybrid cloud, routing/switching,
15 micro-services software, optical networks, wireless and wired networks, and other
16 related markets.

17 **III. Compensation**

18 17. I am being compensated for my services in this matter at my standard
19 consulting rate of \$350 per hour. I am also being reimbursed for expenses that I incur
20 during the course of this work. My compensation is not contingent upon the results
21 of my study, the substance of my opinions, or the outcome of any proceeding
22 involving the challenged claims. I have no financial interest in the outcome of this
23 matter.

24 **IV. Materials Considered**

25 18. In preparing this Declaration, I reviewed and considered the following
26 materials, as well as any others referenced in the body of this Declaration:
27
28

- a. The '682 Patent and its file history, as well as the patents and file histories for the applications identified as Related U.S. Applications on the face of the '682 Patent;
- b. The parties' proposed claim constructions;
- c. Portions of Defendants' invalidity contentions;
- d. The extrinsic evidence cited herein; and
- e. Materials from the *Entropic v. Charter* litigation regarding claim construction of the '682 Patent, including prior expert declarations and the Court's claim construction order.

19. I may use these documents and information, or other information obtained during the course of this or related proceedings, as well as representative charts, graphs, schematics and diagrams, animations, and models based on those documents and information, to support and to explain my testimony. I am informed that discovery in this action is ongoing, and I reserve the right to modify or supplement my opinions, this Declaration, and/or to submit additional declarations to address any information obtained, or positions taken, as discovery continues.

20. My opinions are based in part on a review and analysis of the above-mentioned documents and materials. The materials relied upon within this Declaration are of the type that an expert in my field would have reasonably relied upon in forming opinions related to the subject matter herein during the relevant period. I have also drawn on my education, experience, and knowledge of basic engineering principles for broadband communication systems, Hybrid Fiber Coax (HFC) cable systems, and the systems and equipment used to deliver cable TV/internet to the home, that were already in use prior to the earliest priority date for the claimed subject matter in the '682 Patent.

1 **V. Legal Standards**

2 21. I am not an attorney or a patent attorney, and I offer no opinions on the
3 law. I have, however, been informed by counsel regarding various legal standards
4 that may apply to this case, and I have applied those standards where necessary in
5 arriving at my conclusions.

6 22. I understand that patent claims are construed from the viewpoint of
7 POSITA at the time of the invention. I understand that this hypothetical POSITA is
8 considered to have the normal skills and knowledge of a person in the applicable
9 technical field. The factors that may be considered in determining the level of
10 ordinary skill include: i) the education level of the inventor; ii) the types of problems
11 encountered in the art; iii) the prior art solutions to those problems; iv) the rapidity
12 with which innovations are made; v) the sophistication of the technology; and vi) the
13 education level of active workers in the field.

14 23. I understand that the most important evidence to consider in construing
15 the claims is the “intrinsic” evidence, which I understand includes the claim
16 language, the patent specification, and the prosecution history, including inter partes
17 review (“IPR”) and other post-grant proceedings with the United States Patent and
18 Trademark Office’s (“USPTO”) Patent Trial and Appeal Board (“PTAB”).

19 24. I further understand that a POSITA must read the claim terms in the
20 context of the claim itself, as well as in the context of the entire patent specification.
21 I understand that in the specification and/or prosecution history, the patentee may
22 specifically define a claim term in a way that differs from the plain and ordinary
23 meaning of the term. I understand that the prosecution history of the patent is a record
24 of the proceedings before the USPTO and may contain explicit representations or
25 definitions made during prosecution that affect the scope of the patent claims. I
26 understand that an applicant may, during the course of prosecuting the patent
27 application, limit the scope of the claims to overcome prior art or to overcome an
28

1 Examiner's rejection, by clearly and unambiguously arguing to overcome or
2 distinguish a prior art reference or by clearly and unambiguously disclaiming claim
3 coverage.

4 25. In interpreting the meaning of the claim language, I understand that a
5 POSITA may also consider "extrinsic" evidence, which consists of all evidence
6 external to the patent and prosecution history, including expert and inventor
7 testimony, positions taken by the patent owner in other litigations, dictionaries, and
8 learned treatises. I understand that extrinsic evidence may not be relied on if it
9 contradicts or varies the meaning of the claim language provided by the intrinsic
10 evidence, particularly if the applicant has explicitly defined a term in the extrinsic
11 record.

12 26. I also understand that patent claim may not be interpreted one way to
13 avoid invalidity and another way to find infringement. In other words, a claim must
14 be read the same way for validity as for infringement.

15 27. I understand that Section 112 of the Patent Laws requires that a patent
16 claim particularly point out and distinctly claim the subject matter that the applicant
17 regards as his or her invention. I understand that a patent claim is invalid for
18 indefiniteness if it fails to inform, with reasonable certainty, a person of ordinary skill
19 in the art about the scope and bounds of the invention claimed. I understand a claim
20 is indefinite if its scope is not clear enough that a POSITA could have determined
21 with reasonable certainty whether a particular embodiment practices the claim. I also
22 understand that when considering whether a claim is indefinite, a POSITA may
23 consider both the intrinsic and extrinsic evidence.

24 28. I understand that a claim is not indefinite if, when read in light of the
25 intrinsic evidence, the claim informs a POSITA with reasonable certainty about the
26 scope of the invention. I also understand a claim is not indefinite merely because it
27
28

1 is broad. I understand that the same principles apply to claim terms when individually
2 challenged as indefinite.

3 **VI. Level of Skill in the Art**

4 29. In rendering the opinions set forth in this Declaration, I was asked to
5 consider the patent claims and the prior art through the eyes of a POSITA. The “art”
6 is the field of technology to which a patent is related. In my Declaration, I use the
7 term POSITA to refer to the same hypothetical person of ordinary skill in the art. I
8 considered factors such as the educational level and years of experience of those
9 working in the pertinent art, patents and publications of other persons or companies,
10 the sophistication of the technology, the types of problems encountered in the art, the
11 prior art solutions to those problems, and the speed at which innovations are made. I
12 understand that a POSITA is not a specific real individual but rather a hypothetical
13 individual having the qualities reflected by the factors discussed above.

14 30. The ’682 Patent relates to broadband communication systems, Hybrid
15 Fiber Coax (HFC) cable systems, and the systems and equipment used to deliver
16 cable TV/internet to the home. These types of technologies were typically designed
17 by Electrical, Firmware, and Software Engineers that had experience working with
18 these types of communication systems. I have performed such development myself,
19 and I have further worked with and directly managed these types of engineers in the
20 industry. I am therefore very familiar with the common skill sets required for this
21 type of work.

22 31. Taking these factors into consideration and based on my experience in
23 the industry at the time of the earliest priority date of the ’682 Patent, it is my opinion
24 that a POSITA at that time would have been an engineer with at least a bachelor’s
25 degree in electrical engineering (or equivalent), with at least two years of experience
26 developing broadband/cable TV/satellite communication systems and solutions.

1 Additional education may substitute for professional experience, and significant
2 work experience may substitute for formal education.

3 32. I am qualified to provide opinions concerning what a POSITA would
4 have known and understood at the time of the invention, and my analysis and
5 conclusions herein are from the perspective of a POSITA as of that date.

6 33. As of approximately 2012, I was at least as qualified as the POSITA
7 identified above. Thus, I understand the perspective of a POSITA as of at least as
8 early as July 23, 2012, the earliest priority date of the '682 Patent (*i.e.*, the time of
9 the invention).

10 **VII. '682 Patent**

11 **A. Overview of the '682 Patent**

12 34. The '682 Patent is titled "Method And System For Service Group
13 Management In a Cable Network." The '682 Patent was filed on January 9, 2018,
14 and issued on November 20, 2018. The '682 Patent claims priority to U.S.
15 Application No. 15/434,673, filed on February 16, 2017 (now U.S. Patent No.
16 9,866,438), U.S. Application No. 15/228,703, filed on August 4, 2016 (now U.S.
17 Patent No. 9,577,886), U.S. Application No. 13/948,444, filed on July 23, 2013 (now
18 U.S. Patent No. 9,419,858), and U.S. Provisional Application No. 61/674,742, filed
19 on July 23, 2012. For my analysis herein, I have assumed the date of July 23, 2012
20 as the earliest priority date for the '682 Patent and the time of the invention.

21 35. The '682 Patent is directed to a method and system for a "cable modem
22 termination system (CMTS) [to] determine, for a plurality of cable modems served
23 by the CMTS, a corresponding plurality of SNR^[1]-related metrics." '682 Patent
24 Abstract. Specifically, for example, the CMTS can "determine one or more measured
25 performance metric(s) (e.g., an SNR-related metric such as SNR at a particular
26 frequency or SNR over a range of frequencies (an SNR profile), noise levels, strength

27 ¹ "SNR" refers to signal-to-noise ratio. *See* '682 Patent, 2:15. This acronym was well-
28 known and commonly used in the art in 2012.

of desired signals, and/or the like) for any particular CM 112_x.” *Id.* at 3:55-59. The specification describes how the CMTS may assign cable modems to service groups based on a cable modem’s SNR-related metrics. *See id.* at 5:37–39; 8:7–9.

36. The ’682 Patent further discloses generation of a composite SNR-related metric. *See id.* at claim 1. This composite SNR-related metric allows the CMTS to select physical layer communication parameters that are most appropriate for the cable modems within a given service group, which in turn may lead to optimized performance for the cable modems. *Id.* at 5:7–20. For example, cable modems within the same service group may share similar SNR-related metrics, and thus would benefit from similar physical layer parameters, which makes generation of a composite SNR-related metric for the similarly-situated cable modems advantageous. *Id.* at 4:14–17; 5:7–20; 5:40–57.

B. Disputed Terms of the ’682 Patent

37. I understand there is a dispute over two claim terms of the ’682 Patent:

Disputed Term	Entropic’s Proposed Construction	Defendants’ Proposed Construction
“cable modem termination system”	Plain and ordinary meaning, wherein the CMTS may be realized in hardware, software, or a combination of hardware and software, and may be realized in a centralized or distributed fashion	equipment at which the cable modem’s connection to the hybrid-fiber coaxial network terminates
“SNR-related metric”	Plain and ordinary meaning	Indefinite

38. Below, I have reproduced Claim 1 of the ’682 Patent and have emphasized the terms that are in dispute.

1. A method comprising:

determining, by a *cable modem termination system (CMTS)*, for each cable modem served by said CMTS, a corresponding *signal-to-noise ratio (SNR) related metric*;

assigning, by said CMTS, each cable modem among a plurality of service groups based on a respective corresponding SNR-related metric;

generating, by said CMTS for each one of said plurality of service groups, a composite SNR-related metric based at least in part on a worst-case SNR profile of said SNR-related metrics corresponding to said one of said plurality of service groups;

selecting, by said CMTS, one or more physical layer communication parameter to be used for communicating with said one of said plurality of service groups based on said composite SNR-related metric; and

communicating, by said CMTS, with one or more cable modems corresponding to said one of said plurality of service groups using said selected one or more physical layer communication parameter.

'682 Patent, Claim 1.

i. “cable modem termination system (CMTS)”

39. I understand Defendants contend that the term “cable modem termination system (CMTS)” should be construed as “equipment at which the cable modem’s connection to the hybrid-fiber coaxial network terminates.”

40. I disagree. In my opinion, Defendants’ proposed construction is contrary to the plain and ordinary meaning of “CMTS” and is inconsistent with how a POSITA would understand the term in view of the '682 Patent in 2012. I agree with Entropic that the term should be construed according to its plain and ordinary meaning, wherein the CMTS may be realized in hardware, software, or a combination of hardware and software, and may be realized in a centralized or distributed fashion.

1 41. Defendants’ proposed construction is flawed for two reasons. First, it
2 improperly limits the CMTS to “equipment” (*i.e.*, hardware), when a POSITA would
3 understand that CMTSs necessarily consisted of both hardware and software. Indeed,
4 the hardware would not run without software running on it. Second, Defendants’
5 construction incorrectly requires the entire CMTS to be at a particular physical
6 location (*i.e.*, “equipment at which the cable modem’s connection to the hybrid-fiber
7 coaxial network terminates”), when a POSITA would understand that certain CMTS
8 functions were commonly performed or managed by offsite systems and software
9 (*e.g.*, from a centralized management system operated by the cable operator, or in a
10 distributed manner).

11 42. This understanding is consistent with how the ’682 Patent uses the term
12 “CMTS.” For instance, the patent notes that “[t]he CMTS may comprise circuitry
13 operable to manage connections to the CMs.” *See* ’682 Patent 2:61–62; *see also* 3:42–
14 45 (describing how cable modems “may comprise circuitry operable to communicate
15 with, and be managed by, the CMTS 1102 in accordance with one or more standards
16 (*e.g.* DOCSIS)). As used in the patent specification, “‘circuitry’ refer[s] to physical
17 electronic components (*i.e.* hardware) *and any software and/or firmware* (‘code’)
18 which may configure the hardware, be executed by the hardware, and or otherwise
19 be associated with the hardware.” *See id.* at 2:32–36 (emphasis added). As such, the
20 ’682 Patent uses the term “CMTS” to include both hardware and software
21 components. This is consistent with the plain meaning of “CMTS” as would be
22 understood by a POSITA at the time of the invention.

23 43. Moreover, the ’682 Patent states that “[t]he present invention,” which
24 as recited in the claims includes certain functionalities of the CMTS, “may be realized
25 in a centralized fashion in at least one computer system, or in a distributed fashion
26 where different elements are spread across several interconnected computing
27 systems.” *Id.* at 7:33–36. This is consistent with how CMTSs were used and
28

1 understood at that time. It was common for certain CMTS functions to be performed
2 or controlled by offsite systems and software. For example, subscriber authorization
3 functions and the management of service level(s) for each subscriber were generally
4 understood to be functions of a CMTS, but were often managed from a centralized
5 management system operated by the cable operator; the hardware supporting this
6 management system was not physically located at the point where connections
7 between cable modems and the HFC network terminated. In fact, in 2012 this was
8 common practice in my own work on CMTSs with Motorola Mobility Home, where
9 I oversaw product roadmaps for CMTS hardware and software. In particular, I helped
10 develop a proactive network management (PNM) system which involved certain
11 CMTS functions being performed using a centralized management system in the
12 manner I have described above.

13 44. Consistent with the intrinsic record, a POSITA would understand that
14 the plain and ordinary meaning of “CMTS” includes hardware and software that is
15 not necessarily physically located at the same place as the “equipment at which the
16 cable modem’s connection to the hybrid-fiber coaxial network terminates.” In this
17 regard, a POSTIA would recognize that the CMTS may be realized in hardware,
18 software, or a combination of hardware and software, and may be realized in a
19 centralized or distributed fashion.

20 45. Finally, I note that the technical context of the invention would confirm
21 to a POSITA that this plain-meaning understanding of “CMTS” is correct for the
22 claims of the ’682 Patent. A POSITA would understand that the invention of the ’682
23 Patent is directed to new capabilities for a CMTS to manage its communications with
24 cable modems, rather than the physical location of the components providing those
25 capabilities (or the division or distribution of such functionalities). Further, a
26 POSITA would understand that there is no technical reason that the elements
27 providing the inventive CMTS functionality must be co-located. The POSITA would
28

1 therefore find no reason to understand or interpret “CMTS” as anything narrower
2 than the Patent’s descriptions quoted above that are consistent with the plain
3 meaning.

4 **ii. “SNR-related metric”**

5 46. I understand Defendants contend this term is indefinite. I disagree. A
6 POSITA would understand this term with reasonable certainty in light of the intrinsic
7 record.

8 47. In an attempt to understand why Defendants would assert this phrase is
9 indefinite, I reviewed portions of Defendants’ invalidity contentions. With respect to
10 the alleged indefiniteness of this term, Defendants there state only that “[a] person of
11 ordinary skill in the art would not understand with reasonable certainty what ‘[] SNR-
12 related metric’ means within the context of the claim language and the intrinsic
13 record.” Exhibit C (Defendants’ Preliminary Invalidity Contentions), 168. This is no
14 explanation at all. If Defendants or any of their experts explain precisely why they
15 allege indefiniteness, I may have specific responses to those positions.

16 48. A POSITA would have reasonably understood the boundaries of the
17 term “SNR-related metric” as generally referring to any metric representing and/or
18 measuring signal quality. Various patent and non-patent literature from the time
19 period confirm that this was the case. For example, U.S. Patent Publication No.
20 2009/0003468 by Karabulut et al. states that “SNR is often not measured directly and
21 other related metrics can be measured instead, such as received signal power” and
22 that “an SNR related metric can be equivalently used.” Exhibit D, U.S. Pat. Publ’n
23 No. 2009/0003468, at ¶ 0027; *see also generally* Exhibit E, U.S. Pat. No. 7,457,588,
24 at 5:28–31 (referencing “reporting SNR or another SNR-related metric”); Exhibit F,
25 Lin et al. RANDOM ACCESS HETEROGENEOUS MIMO NETWORKS (2011), at 152
26 (“[effective SNR] is a novel SNR-related metric”). A POSITA would have
27 understood that these metrics all represent or measure signal quality.

1 49. The '682 Patent uses the term "SNR-related metric" in a manner
2 consistent with how a POSITA would understand the term. In particular, the patent
3 states that a CMTS can "determine one or more measured performance metric(s)
4 (e.g., an SNR-related metric such as SNR at a particular frequency or SNR over a
5 range of frequencies (an SNR profile), noise levels, strength of desired signals, and/or
6 the like) for any particular CM 112_x." *Id.* at 3:55–59. Consistent with what a POSITA
7 would understand, an "SNR-related metric" could be signal-to-noise ratio, noise
8 level, strength of desired signal, bit error rate, symbol error rate, or the like. *See id.*;
9 *see also* U.S. Pat. No. 9,178,765^[2] at 3:40–44. Each of these were understood to be
10 measurements relating to signal quality. Comcast's experts in related *inter partes*
11 review proceedings have provided relevant testimony. In one challenge of a related
12 patent-in-suit with a priority date of September 8, 2011, one of Comcast's experts
13 recognized that modulation error ratio ("MER") and bit error ratio ("BER") are other
14 metrics that "were used to measure signal quality" and were known to a POSITA.
15 *See* Exhibit G, IPR2024-00441, Ex. 1002, Declaration of David B. Lett ¶¶ 48, 54. A
16 second expert for Comcast who testified in its *inter partes* review challenge of the
17 '682 Patent also recognized that modulation error ratio ("MER"), bit error rate
18 ("BER"), and symbol error rate (SER) are metrics related to SNR that were known
19 to be used for measuring signal power. Exhibit H, IPR2024-00445 Ex. 1102,
20 Declaration of Sayfe Kiaei ¶ 91 ("SNR is related to MER, as if the channel noise
21 increases, the bit-error rate (BER), symbol error rare [*sic*] (SER), and MER will
22 increase"). I agree with Comcast's experts that measurements of MER, BER, and
23 SER would be within a POSITA's understanding of the scope of the term "SNR-
24 related metric."

25
26
27 ² The '682 Patent incorporates by reference U.S. Patent Application 13/948,401 ('682
28 Patent at 1:38-40), which ultimately issued as U.S. Patent No. 9,178,765 on Nov.
3, 2015.

1 50. Based on the foregoing, a POSITA would understand with reasonable
2 certainty the scope of the term “SNR-related metric.” Therefore, I disagree with
3 Defendants that this term is indefinite.
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

1 I declare that all statements made of my own knowledge are true and that all
2 statements made on information and belief are believed to be true, and that these
3 statements were made with the knowledge that willful false statements and the like
4 are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of
5 the United States Code.

6
7 19 April 2024
8 Date

John Holobinko
John Holobinko

9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
**DECLARATION OF JOHN HOLOBINKO IN SUPPORT OF PLAINTIFF
ENTROPIC'S PROPOSED CLAIM CONSTRUCTIONS**